AWS INTEGRATED RESTAURANT RESERVATION SYSTEM

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ABSTRACT

The restaurant industry requires efficient reservation management to improve customer experience and operational efficiency. Traditional reservation methods rely on phone calls and manual record keeping, leading to errors and delays. This project proposes an AWS Integrated Restaurant Reservation System that automates booking, table management, and customer notifications. The system is hosted on Amazon Web Services to ensure scalability, reliability, and high availability. Customers can reserve tables online through a web application. Real-time table availability reduces overbooking. AWS services such as EC2, RDS, and S3 are used for deployment and data storage. Automated notifications improve customer communication. Secure authentication protects user data. The system reduces operational workload and enhances service quality. This project demonstrates how cloud integration modernizes restaurant management.

KEY WORDS

Restaurant Reservation, AWS Cloud, Web Application, EC2, RDS

INTRODUCTION

The growth of online services has transformed the restaurant industry. Customers expect quick and convenient reservation options. Manual reservation systems are inefficient. Overbooking and missed reservations are common. Cloud computing offers scalable solutions. AWS provides reliable infrastructure. Web-based reservation systems improve accessibility. Real-time data management enhances efficiency. Automated notifications reduce no-shows. Secure cloud platforms protect customer data. This project focuses on AWS integration. It aims to improve reservation accuracy. The system supports multiple users. It enhances restaurant operations. Digital transformation improves customer satisfaction.

LITERATURE SURVEY

Research emphasizes the role of cloud computing in service industries. Online reservation systems improve customer convenience. AWS offers scalable hosting solutions. Database-driven applications ensure data consistency. Studies discuss load balancing and high availability. Cloud security is a major concern. Some research focuses on mobile booking apps. Real-time systems reduce overbooking. User experience is critical. Automated messaging improves communication. Existing studies lack full AWS integration. Literature supports cloud-based reservation platforms. Cost optimization is discussed. Scalability remains a key factor. Research validates AWS-based systems.

RELATED WORK

Existing platforms such as OpenTable provide reservation services. These systems are expensive for small restaurants. Some web-based systems offer basic booking. Academic projects often use local servers. Few systems leverage AWS fully. Some lack real-time updates. Integration with notifications is limited. Database performance is an issue. Customization is minimal. Security features vary. Existing systems focus on functionality. Analytics are often missing. The proposed system improves scalability. AWS ensures reliability. The system is cost-effective.

EXISTING SYSTEM

The existing reservation process is mostly manual. Phone calls are used for bookings. Reservation logs are written manually. Overbooking occurs frequently. Table utilization is inefficient. Customer reminders are not automated. Data storage is unorganized. Reporting is manual. Staff workload is high. Errors are common. No real-time availability updates exist. Scalability is poor. Data security is limited. Customer experience is affected. Operational efficiency is low.

PROPOSED SYSTEM

The existing reservation process is mostly manual. Phone calls are used for bookings. Reservation logs are written manually. Overbooking occurs frequently. Table utilization is inefficient. Customer reminders are not automated. Data storage is unorganized. Reporting is manual. Staff workload is high. Errors are common. No real-time availability updates exist. Scalability is poor. Data security is limited. Customer experience is affected. Operational efficiency is low.
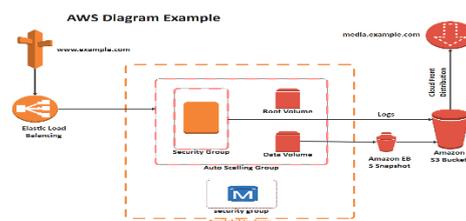
SYSTEM ARCHITECTURE

Fig 1: System Architecture

METHODOLOGY DESCRIPTION

Requirements are gathered from restaurant operations. System architecture is designed using AWS services. Database schemas are created in RDS. Web interfaces are developed. Backend APIs handle bookings. EC2 hosts application logic. S3 stores assets. Security groups manage access. Testing ensures functionality. Performance testing validates scalability. User acceptance testing is performed. Deployment is completed. Monitoring is enabled. Maintenance strategies are planned. Continuous improvement is supported.
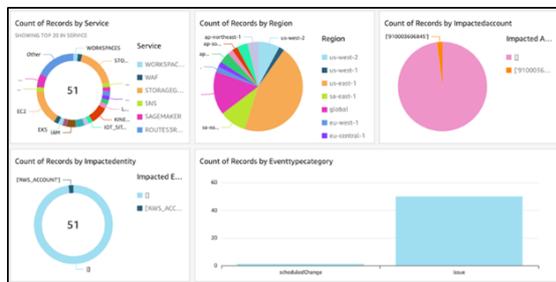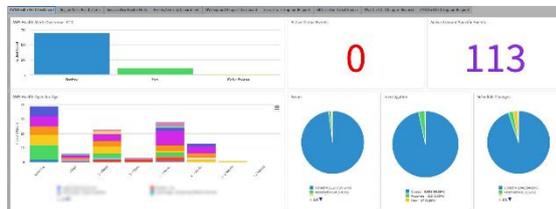
RESULTS AND DISCUSSION

Fig 2: Home Page
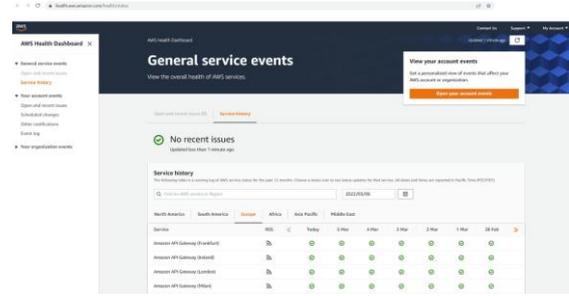

Fig 3: Slot Page

Fig 4: Booking Page

CONCLUSION

The AWS Integrated Restaurant Reservation System provides an efficient cloud-based solution. It automates booking and management. AWS ensures scalability and reliability. Real-time updates reduce overbooking. Automated notifications improve customer experience. Secure data handling builds trust. The system reduces staff workload. It improves operational efficiency. Future enhancements include mobile app support. AI-based demand prediction can be added. Integration with payment gateways is possible. Overall, the project demonstrates effective cloud integration for restaurant management.

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